REPORT OF LAMINATION CONTOUR MEASUREMENTS USING THE KORDA 83 WITH A TOUCH PROBE (RENISHAW TPI)

Booster Technical Note

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Generally this technique, (carried out carefully), should yield results to better than ± 0.001". The sensitivity is around 0.0001".

As long as the height (Z dimension) of the ball of the touch probe where it touches the edge of the lamination is unchanged neither the roundness of the ball nor the slant of the shear by the die will affect the relative value of the measured y dimensions.

If the lamination is not flat on the jig table both the ball roundness and shear slant will cause errors in the relative y dimension measurements.

When shifting from top edge to bottom edge measurements the absolute Z position must be maintained or the ball roundness and shear slant will obviously produce errors in the absolute numbers, and, of course, for absolute numbers twice the ball diameter provides the correction factor for the shift, provided the middle of the ball is doing the touching.

Minute (insignificant) burrs can also give false readings, so a number of check measurements need to be made on either side of a suspected reading.

The gap of the laminations appears to be flat to ± 0.001" on the average. Gauge block measurements confirmed this.

Not all the original measurements made in April and May 1986 were done with the touch probe. Some were done optically with cross hairs. Measurements done this latter way are less accurate.

The projections at the sides of the gap to trim the field were also used as stacking supports. They are flat to < ± 0.0005" on lamination N14.